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| APPLICATION NO.  | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 10/647,256   | 08/26/2003  | Chia-Lun Tang        | TANG3011/EM         | 3061             |
| 23364  | 7590        | 12/01/2004           | EXAMINER            |                  |
| BACON & THOMAS, PLLC<br>625 SLATERS LANE<br>FOURTH FLOOR<br>ALEXANDRIA, VA 22314 |             |                      | CHEN, SHIH CHAO     |                  |
|  |             |                      | ART UNIT            | PAPER NUMBER     |
|  |             |                      | 2821                |                  |

DATE MAILED: 12/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

AK

# Office Action Summary

Application No.

10/647,256

Applicant(s)

TANG ET AL.

Examiner

Shih-Chao Chen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 26 August 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 August 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Drawings***

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the two second plans are extended upward from the surface of the first ground plane in claim 7 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Specification***

2. The disclosure is objected to because of the following informalities: on page 3, line 11, "the antenna 1" should be changed to --the antenna 10--.

Appropriate correction is required.

3. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: because "the two second plans are extended upward from the surface of the first ground plane" in claim 7 is not described in the specification.

***Claim Objections***

4. Claims 1 and 6 are objected to because of the following informalities: in lines 4-5, "the radiation metal piece" should be changed to --the radiation patch--. Appropriate correction is required.

5. Claim 1 is objected to because of the following informalities: in lines 13-14, "the feeding-in device will connect the radiation patch" should be changed to --the feeding-in device is connected the radiation patch--. Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1-9 are rejected under 35 U.S.C. 102(b) as being anticipated by Yokoyama et al. (U.S. Patent No. 4,791,423).

Regarding claim 1, Yokoyama et al. teaches in figures 3A and 3B a radiation device with a L-shaped ground plane [42, 44] comprising: a radiation patch [48]; a feeding-in device [50, 51] for exciting the radiation patch; and a ground plane element having a first ground plane [42] and a second ground plane [44], the first ground plane [42] being parallel to the radiation patch [48], and the second ground plane [44] being installed on the first ground plane so as to form an included angle (i.e.  $\theta=90$  degrees) between the first and second ground planes; wherein the feeding-in device [50] is connected the radiation patch to the first ground plane of the ground plane element.

Regarding claim 2, Yokoyama et al. teaches in figures 3A and 3B the radiation device of claim 1, wherein the included angle between the first ground plane [42] and the second ground plane [44] is equal to 90 degrees.

Regarding claim 3, Yokoyama et al. teaches in figures 3A and 3B the radiation device of claim 1, wherein the included angle between the first ground plane [42] and the second ground plane [44] is equal to 90 degrees.

Regarding claim 4, Yokoyama et al. teaches in figures 3A and 3B the radiation device of claim 2, wherein the ground plane element [42, 44] is a L-shaped ground plane.

Regarding claim 5, Yokoyama et al. teaches in figures 3A and 3B the radiation device of claim 1, wherein on the left side of the first ground plane [42], the second ground plane [44] is extended upward from the surface of the first ground plane where the radiation patch [48] is installed so as to form the ground plane element.

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Regarding claim 6, Yokoyama et al. teaches in figures 3A and 3B the radiation device of claim 1, wherein on the right side of the first ground plane [42], the second ground plane [46] is extended upward from the surface of the first ground plane where the radiation patch is installed so as to form the ground plane element.

Regarding claim 7, Yokoyama et al. teaches in figures 3A and 3B the radiation device of claim 1, wherein the L-shaped ground plane [42, 44] further comprises another second ground plane [46], and the two second planes [44, 46] are extended upward from the surface of the first ground plane [42] where the radiation patch [48] is installed, respectively on the left and right sides of the first ground plane, so as to form the ground plane element.

Regarding claim 8, Yokoyama et al. teaches in figures 3A and 3B the radiation device of claim 1, wherein the height of the second ground plane [44] is not greater than twice distance between the radiation patch [48] and the first ground plane [42].

Regarding claim 9, Yokoyama et al. teaches in figures 3A and 3B the radiation device of claim 1, wherein the radiation patch [48] is rectangular.

### ***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yokoyama et al. (Cited above) in view of Isohatala et al. (U.S. Patent No. 6,366,243).

Yokoyama et al. teaches every feature of the claimed invention in paragraph 7 except for the radiation patch is circular; and a shorted structure installed between the radiation patch and the ground plane.

Isohatala et al. teaches in figures 6-7 and 8h the radiation patch [600] is circular (See Fig. 8h); and a shorted structure [706] installed between the radiation patch [600] and the ground plane [702].

In view of the above statement, it would have been obvious to one having ordinary skill in the art at the time the invention was made to substitute the radiating conductive sheet as shown in Yokoyama et al. by using the radiation patch is circular; and a shorted structure installed between the radiation patch and the ground plane. as taught by Isohatala et al. in order to show various alternative planar radiating element designs (See col. 5, lines 18-19).

### ***Correspondence***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shih-Chao Chen whose telephone number is (571) 272-1819. The examiner can normally be reached on Monday-Friday from 7 AM to 4:30 PM, First Fri. off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Don Wong can be reached on (571) 272-1834. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

*Shih-Chao Chen*  
Shih-Chao Chen  
Primary Examiner  
Art Unit 2821

SXC  
November 29, 2004